

Pleistocene stone pendant from Western Australia

Robert G. Bednarik

One of the most unusual objects so far recovered in Australia's Pleistocene archaeology is a perforated stone fragment excavated from the cave deposit of Devil's Lair in 1973 (Dortch and Merrilees 1973). The marl object, thought to be between 12,000 and 19,000 years old, has been described as a possible pendant (Dortch 1979a, 1980). It is one of several unusual objects reported from this site that have been subjected to prolonged discussion and speculation. There are also several 'plaques' with engraved markings thought to be anthropic and some other perforated objects, including three ground bone beads (Dortch 1976, 1979b, 1984; Flood 1995:109-10). In response to critical review, the identifications of several finds from the site were recently revised (Dortch and Dortch 1996: Table 1), and C.E. Dortch, the excavator, has arranged for the marked and some of the perforated objects to be subjected to specialist study (Dortch and Dortch 1996:30).

The perforated marl object, numbered B3653 by the Western Australian Museum, has been described by Dortch (1980) after its examination by a geologist. It was concluded that it bears no definite marks of artificial shaping, but that its perforation was produced by boring or gouging. In the absence of a plausible utilitarian function it was thought to be 'conceivable' that the piece served as an ornamental pendant.

In mid-1996 I was approached by the Western Australian Museum to re-examine the collection of controversial 'cultural' objects from Devil's Lair. Three perforated items were included among the objects I was asked to study, using the general methodology I had developed over previous decades in my work on large numbers of both portable and non-portable 'palaeoart' (presumably non-utilitarian phenomena) in all continents, primarily of the Pleistocene. One of these was the marl object, the other a tiny sliver of an avian long bone and another stone specimen. Here I report my findings concerning the marl object.

The marl object and its context

The perforated marl object from Devil's Lair is from trench 8₇, layer 0, about 140 cm below datum. This is stratigraphically about halfway between the depths of two pairs of radiocarbon samples (Dortch 1979b: Fig. 3, Table 1): SUA-102 and 103 of about 12,000 BP, and SUA-33 and 101 of about 19,000 BP. It should be noted here that the processing

laboratory at Sydney University discovered a systematic error subsequent to these determinations, when it was realised that the handmade glass vials used on the old counter led to variations in the count rate (Temple and Barbetti 1981). Since only samples after December 1978 (beginning with SUA-963) were re-calibrated, the carbon isotope results from Devil's Lair should be considered imprecise. It must be pointed out that the recent review of the 'radiocarbon chronology' of the site (Dortch and Dortch 1996) omits to take this into account, and the discussion therein needs to be considered in that light. While this should not affect the attribution to the Pleistocene of the finds discussed here, I would not further speculate about the age of the marl object on the basis of present evidence.

The perforated marl object weighs over 18 g and measures a maximal 55 mm. Across its upper part (Fig. 1) runs a very fine fracture along a zone of structural weakness that has given rise to the formation of the perforation and other hollows, through natural weathering processes. The 6.5 mm

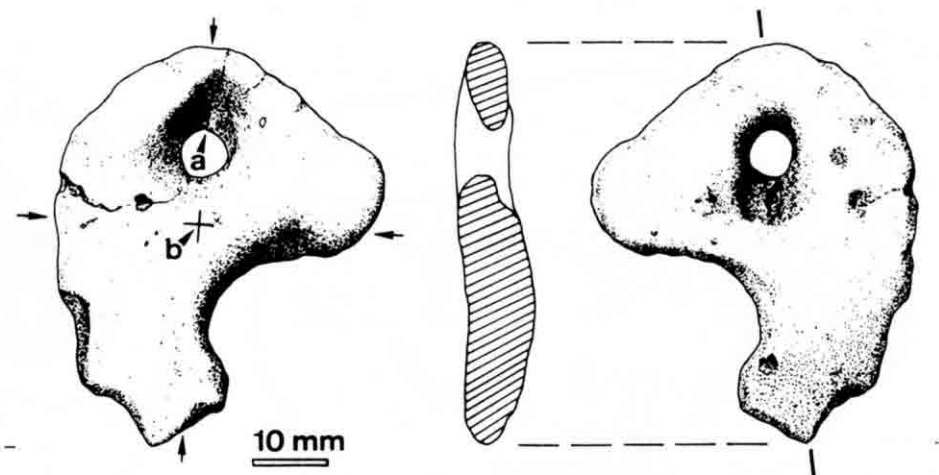


Figure 1 Two views and section of the marl pendant from Devil's Lair, Western Australia: (a) location of the string wear marks shown in Figure 2; (b) location of centre of gravity. (Adapted from Dortch 1980, with permission.)

diameter hole bears no trace whatsoever to indicate that it was drilled, enlarged, modified or reamed in any way by human hand. It was formed entirely by natural attrition.

The soft and porous marl the object consists of resembles the material numerous Upper Palaeolithic stone objects of Europe were made from, such as the Willendorf No. 1 figurine (which is of somewhat harder stone) and many of the Russian figurines and fragments thereof (e.g. 24 figurines from the two Avdevo sites and many more from Kostenki I; cf. Bednarik 1990). There are also numerous Palaeolithic marl pendants known from Russia, especially the 30 from Avdevo Staraya, 145 from Avdevo Novaya, and others from Kostenki, as well as many other objects of carved marl (such as engraved pieces, and balls with 'heads'). Thus the

use of marl for the production of decorative or artistic objects is well known from the late Pleistocene.

Having examined a large number of such items abroad I consider that different types of marl can be identified and possibly sourced. The Devil's Lair marl object has been examined petrographically in the 1970s (Dortch 1980), which led to the conclusion that it differs from the coastal limestone in which the cave occurs. Dortch therefore assumed that it must have been carried in from another locality. The geologist described the marl as containing scattered rounded quartz grains. This is in my view incorrect: the quartz grains, which are poorly sorted in size, are of irregular shape and frequently quite angular. Some of them were even fractured (from previously rounded and frosted grains) before they became embedded in their present calcareous matrix. These and other characteristics render the stone quite distinctive and it might well be possible to establish its place of origin. It is correct, however, that the stone does not seem to occur naturally in the cave: it differs significantly from the aeolian limestone forming the cave, of which I have examined many samples.

Microscopic examination

In examining Pleistocene stone pendants for use traces one focuses on the inside of their perforation. More specifically, the most important area is the perforation surface opposite the object's centre of gravity (Bednarik 1990:134-5). This is where wear traces are usually present if a perforated object was worn as a pendant.

The inner surface of the perforation of the Devil's Lair marl piece bears four wear grooves (Fig. 2). Viewed from the side depicted on the left in Figure 1, these are, from left, as follows. The first groove is very shallow and wide, measuring up to 550 μm width. Next follows an almost V-shaped groove that still possesses a rounded bottom. It is 530 μm wide at its widest point, and up to about 240 μm deep. Quite close to this is the third groove, well rounded but shallow, and of up to 310 μm width. Immediately adjacent follows a wide, rather faint abrasion of maximal 750 μm width.

One part of the deepest groove (the second) seems to provide a good indication of the size of the string that

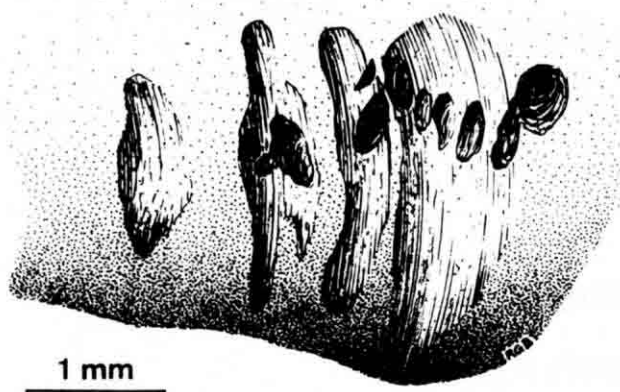


Figure 2 Close-up view of the wear marks inside the perforation of the Devil's Lair stone pendant. The small dark areas are natural cavities in the marl.

caused this marking. It includes a well-rounded section of 225 μm diameter. This is so well preserved that it seems to indicate the approximate diameter of the string.

These four abrasion or wear marks are distributed across the surface precisely where such wear would have had to occur if the object had been suspended on a string. The occurrence of several single marks alongside one another suggests that the object was not tied to the string by means of a knot, but was merely threaded onto the supporting cordage. There is no indication of the type of string employed. In view of the extreme softness of the marl the comparatively shallow wear grooves indicate that the object was not worn for a long time, certainly not more than a few days. There are no discernible markings of the type occasioned by adjacently located perforated objects, which can sometimes be observed on such jewellery where more than one item was worn on a string.

The wear marks are free of the light-brown surface patina residues locally found on the surface of the object. However, the piece was unfortunately cleaned in a sonic bath during its petrographic examination, a form of treatment to which archaeological specimens should obviously never be subjected. This explains the clean appearance of the surface, and the removal of much of its thin surface crust. There is thus no definite proof that the markings are not recent. However, C.E. Dortch, in whose care the object has been since it was excavated, is absolutely certain that at no stage since its excavation was the object experimentally threaded onto a string. Therefore, we can be certain that its manipulation in this way occurred prior to its deposition in Devil's Lair.

Discussion

Dortch (1980) did consider the possibility that the object was utilitarian, e.g. used as a polishing tool for wooden artefacts or bone tools. The specimen's material is far too soft for this, and the wear traces such use would have produced are entirely lacking. Similarly, its use as a buckle, quanging or pulling handle (Boas 1888: Figs 17, 121d) can be safely excluded due to its fragility. It is of course possible that the piece was used as a small weight for some unknown purpose, but this does not seem very likely. Among the possible uses that of a decorative pendant remains by far the most convincing, confirming Dortch's initial opinion. The perforation itself, however, was certainly natural, and bears no anthropic and intentional modification marks of any kind.

It follows that the object was in all probability collected some distance from the find site, because of its natural perforation and perhaps even, as Dortch (1980) suggests, for its odd shape. It was worn as a pendant and eventually came to be deposited in Devil's Lair, most probably between 13,000 and 18,000 years ago. It is the only stone pendant so far recovered from the Australian Pleistocene. In other continents, notably Europe and Asia, such stone pendants have been found at Palaeolithic occupation sites from Europe to Japan (Bednarik 1994a, 1994b), and although a variety of materials have been used (Bednarik 1995: Figs 4, 5), marl is the most commonly found for this kind of application. It should be emphasised, however, that taphonomic logic (Bednarik 1994c) predicts a significant over-representation of

ornaments made of stone, hence they are still to be regarded as rare, even in Europe.

While beads made of organic materials are quite common among archaeological finds in Australia, even of the Pleistocene and early Holocene (several hundred specimens besides those at Devil's Lair: Morse 1993; Feary 1996), the pendant considered here remains the only early example of its kind in Australia (cf. McBryde 1968; Massola 1970).

Acknowledgements

My thanks go to Charles Dortch, who requested my study of the Devil's Lair and other material, arranged the loan of the finds to me, and provided literature and encouragement.

References

- Bednarik, R.G. 1990 More to Palaeolithic females than meets the eye. *Rock Art Research* 7:133-7.
- Bednarik, R.G. 1994a The Pleistocene art of Asia. *Journal of World Prehistory* 8:351-75.
- Bednarik, R.G. 1994b Art origins. *Anthropos* 89:169-80.
- Bednarik, R.G. 1994c A taphonomy of palaeoart. *Antiquity* 68: 68-74.
- Bednarik, R.G. 1995 Towards a better understanding of the origins of body decoration. *Anthropologie* 33(3):1-16.
- Boas, F. 1888 *The Central Eskimo*. Reprinted 1964, Lincoln: University of Nebraska.
- Dortch, C.E. 1976 Two engraved stone plaques of late Pleistocene age from Devil's Lair, Western Australia. *Archaeology and Physical Anthropology in Oceania* 11:32-44.
- Dortch, C.E. 1979a Australia's oldest ornaments. *Antiquity* 53: 39-43.
- Dortch, C.E. 1979b Devil's Lair, an example of prolonged cave use in south western Australia. *World Archaeology* 10:258-79.
- Dortch, C.E. 1980 A possible pendant of marl from Devil's Lair, Western Australia. *Records of the Western Australian Museum* 8(3):401-3.
- Dortch, C.E. 1984 *Devil's Lair, a Study in Prehistory*. Perth: Western Australian Museum.
- Dortch, C.E. and Dortch, J. 1996 Review of Devil's Lair artefact classification and radiocarbon chronology. *Australian Archaeology* 43:28-32.
- Dortch, C.E. and Merrilees, D. 1973 Human occupation of Devil's Lair, Western Australia during the Pleistocene. *Archaeology and Physical Anthropology in Oceania* 8:89-115.
- Feary, S. 1996 An Aboriginal burial with grave goods near Cooma, New South Wales. *Australian Archaeology* 43:40-4.
- Flood, J. 1995 *Archaeology of the Dreamtime* (Third Edition). Sydney: Angus and Robertson.
- McBryde, I. 1968 Archaeological investigations in the Graman district. *Archaeology and Physical Anthropology in Oceania* 3:77-93.
- Massola, A. 1970 A note on perforated stone pendants. *Archaeology and Physical Anthropology in Oceania* 5:80.
- Morse, K. 1993 Shell beads from Mandu Mandu Creek rock-shelter, Cape Range Peninsula, Western Australia, dated before 30,000 BP. *Antiquity* 67:877-83.
- Temple, R.B. and Barbetti, M. 1981 Revisions to radiocarbon dates from the Sydney University Radiocarbon Laboratory. *Australian Archaeology* 13:28-9.

IMAGINED DESTINIES
ABORIGINAL AUSTRALIANS
AND THE DOOMED RACE THEORY, 1880-1939

by
Russell McGregor
Melbourne University Press

1997